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MICROPEZA CORRIGIOLATA (L.), A EURASIAN STILT-LEGGED FLY (DIPTERA: MICROPEZIDAE) NEW TO NORTH AMERICA: REDESCRIPTION, GEOGRAPHIC DISTRIBUTION, AND BIONOMICS

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Abstract.—The common and widespread Eurasian micropezid fly *Micropeza corrigiolata* (L.) is reported for the first time from North America. Adults were collected in late June 1993 in New Brunswick, Canada. This adventive species is redescribed, and habitus photographs of the male and female are provided to facilitate identification. Notes on its geographic distribution, bionomics, and ecology are provided. A key to the species of *Micropeza* of Canada and Alaska (Merritt and Peterson 1976) is modified to include *M. corrigiolata*.

Key Words: Diptera, *Micropeza corrigiolata*, stilt-legged fly, North America, distribution, bionomics

During our continuing search for immigrant insects in eastern North America, we collected ten specimens of a small stilt-legged fly in New Brunswick, Canada, that proved to be the Palearctic *Micropeza corrigiolata* (L.), family Micropezidae. This species has not been recorded before in North America.

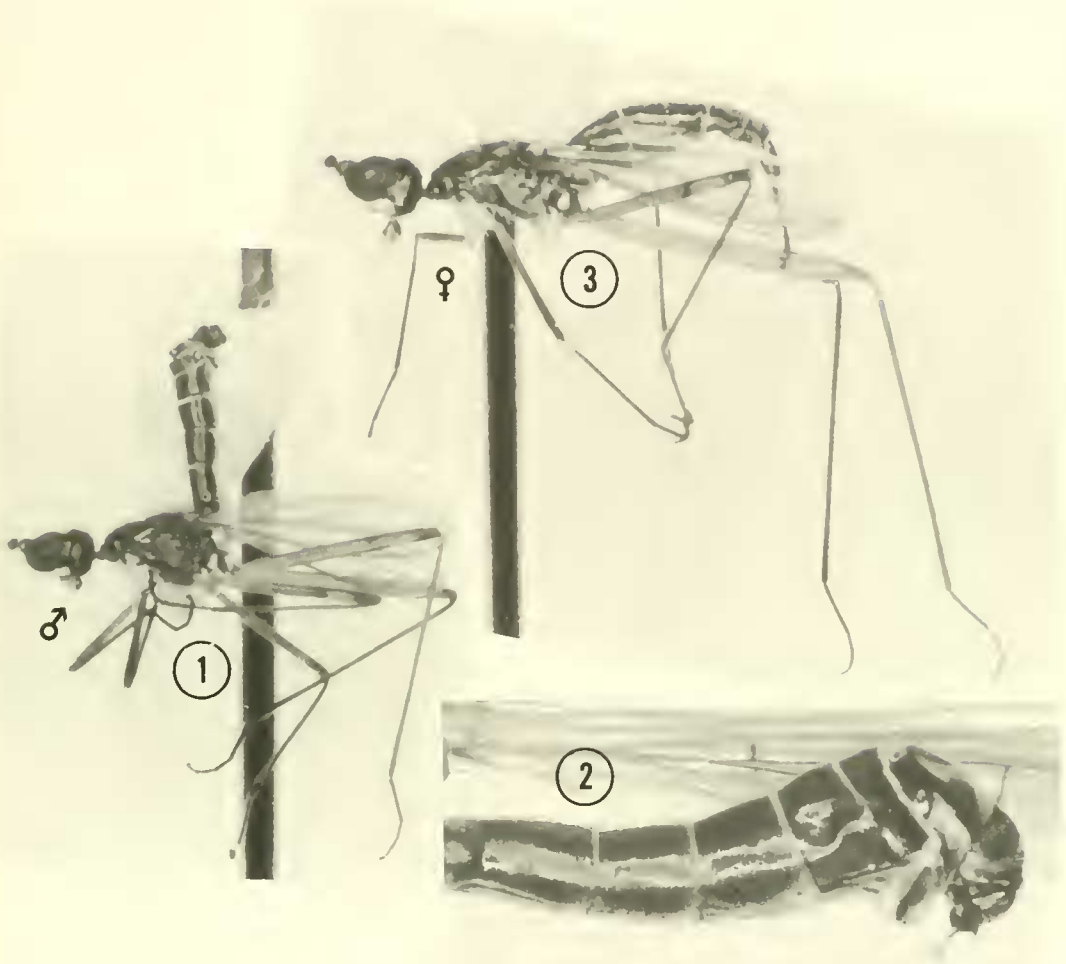
Diagnostic Features

The Canadian specimens agree with the description of *M. corrigiolata* and key readily to that species in the European literature (Czerny 1930, Shtakel'berg 1988, Roháček and Barták 1990). For final identification, comparative material of *Micropeza corrigiolata* from Europe were obtained from the National Museum of Natural History, Smithsonian Institution, Washington, D.C. Terminology used in the description below follows that of Merritt (1971), and Merritt and James (1973).

Redescription. Male (Figs. 1, 2): Head glossy and polished, mainly black, including parafrontal area, epicephala, and ocellar spot; mesofrons black; face and bucca pale yellow to almost white; paracephala and occiput black with oral margin pale yellow; frontale not differentiated; distal portion of proboscis pale yellow, proximal portion black; palpus dark brown to black; antenna black, arista white, brownish at extreme base; inner- and outer-vertical bristles, and postvertical bristles black.

Thorax dull black, except prosternum whitish, distinctly cinereous-pruinose; meso- and metasternum with dark bristles or bristlelike setae; strong bristles of thorax black. Haltere yellow. Wing brownish hyaline, veins brown. Procoxa yellow; meso- and metacoxa brownish; femur yellow-orange, except preapical ring (annulus) and apices of meso- and metafemora brownish; profemur with apical half, and all tibiae and tarsi brownish. Legs clothed with black setae and bristles.

Abdomen (Fig. 2) mostly black; tergites narrowly pale yellow to white at posterior



Figs. 1–3. *Micropeza corrigiolata*. 1, Male habitus, lateral aspect. 3, Female habitus, lateral aspect. 2, Male abdomen and genital structures, lateral aspect. Collected at St. John, St. John Co., New Brunswick, Canada, 24 June 1993.

and lateral margins; sternites also brownish to black except for pale lateral margins. Terminalia (Fig. 2) brown to black. Sternite 5 without pair of lobes or claspers [= abdominal clasping organ; "Kopulationsgabel" of Emden and Hennig (1970)]. Abdomen cinereous-pruinose, except for ninth tergite more or less polished. Length 4.5–5.0 mm.

Female (Fig. 3): Similar to male in most respects, but somewhat larger. Ovipositor glossy black, slender, tapered towards apex. Length 5.0–7.0 mm.

Discussion

An important early work on the taxonomy of the North American Micropezidae is that of Cresson (1938), who recognized eight Nearctic species of the genus *Micropeza* (subgenus *Micropeza*) and divided them into three species groups (*corrigiolata, turcana,* and *nitidor* groups). Ten Nearctic species of *Micropeza* (*Micropeza*) are now recognized, distributed chiefly in western North America and ranging from the north-

ern Great Plains southward into Mexico and the Neotropical Region (Merritt and James 1973, Steyskal 1987).

In addition to being the only eastern North American *Micropeza*, *M. corrigiolata* is easily distinguished from the other Nearctic members of the genus by the lack of an abdominal clasping organ in the male (all others have the fifth abdominal sternite with a well-developed pair of lobes or claspers) and the mainly black coloration (most other species have variable color patterns of the head and thorax).

Merritt and Peterson (1976) provided a synoptic review of the micropezid species in Canada and Alaska, with keys, illustrations, and descriptions of four new species. They did not treat *M. corrigiolata*. Had specimens of this rather distinctive species been housed in the various institutional collections they studied, they would surely have noted and recorded it from Canada.

As a result of their extensive study, Merritt and Peterson (1976) recorded four species of *Micropeza* from Canada and Alaska, including the newly described *M. chillcotti*. All are known from states and provinces west of the Mississippi River in the United States, and the 90th Meridian in Canada. The following changes should be made to the Merritt and Peterson (1976) key to species of *Micropeza* (couplets 5–7, p. 1490) to include *M. corrigiolata*. Figure numbers printed in boldface type refer to figures published with the original key.

(Couplets 1–4 unmodified).

5. Fifth sternite of male either directed posteriorly and apically expanded into platelike structure, or modified into clasping organ, directed anteriorly as pronglike, digitate process 5a
– Fifth sternite of male entirely unmodified (no platelike structure or clasping organ) (Fig. 2) ..... *corrigiolata* (L.)

5a. Fifth sternite of male directed posteriorly, and expanded into a platelike structure as in **Fig. 5**; male surstyli modified into large cupped structures (**Fig. 5**). Head with a broad U-shaped marking (**Fig. 6**). Mesonotum blackish and densely greyish pruinose, with distinct vittae (**Fig. 6**) ... *chillcotti* Merritt and Peterson (1976)
– Fifth sternite of male modified into clasping organ, directed anteriorly as a pronglike, digitate process (**Figs. 7, 9, 11**); male surstyli simple and reduced in size. Head and mesonotal pattern not as above 6

(Couplets 6 and 7 unmodified).

Geographic Distribution

Micropeza corrigiolata is widely distributed throughout all parts of Europe, Turkey, and also vast areas of the European part of the former Soviet Union including Estonia, Latvia, Lithuania, Russia, Byelorussia, Ukraine, and Moldavia (Soós 1984). In North America, it is known only from two localities in New Brunswick, Canada: St. John Co., St. John, 24–25 June 1993, sweeping vegetation, 4 males, 5 females; Westmorland Co., Moncton, 25 June 1993, sweeping vegetation, 1 male. Specimens are deposited in the Cornell University Insect Collection (Ithaca, NY) and the United States National Museum of Natural History (Washington, DC).

We observed and collected these flies from low-growing vegetation alongside several warehouse buildings near a railroad yard and along tracks at St. John, and on vegetation at another railroad right-of-way at Moncton. Flies were quite abundant at the two locations in St. John.

Bionomics

Adults of *M. corrigiolata* are common in habitats with leguminous plants, and are usually observed on vegetation in damp and shady places, in meadows and fields, resting and running on the upper surface of foliage of bushes and other herbaceous plants (Roháček and Barták 1990). While resting or running on foliage with wings folded over their abdomens, adults rub and wave their foretarsi in front of them (personal observation), a habit also observed for other micropezids (Berg 1947). Flies may occur in great numbers, especially on legumes, from

the beginning of June until the middle of July in Europe (Müller 1957). In Britain and western Europe, this species is not uncommon in gardens, where it likely breeds in compost heaps (Chinery 1986). Séguy (1951) stated that adults of *M. corrigiolata* are predacious ("zoophagous") on other small insects; this predatory habit of micropezids has been subsequently mentioned by such workers as Oldroyd (1964: 177) and Colyer (1968: 200). Merritt and James (1973), however, proposed that adults feed on excrement, carrion, and putrefied fruit, based on their sponging mouthparts.

Larvae of *M. corrigiolata* have been reared from root nodules of field pea (*Pisum arvense* L.), red clover (*Trifolium pratense* L.), and alfalfa (*Medicago sativa* L.) in Europe (Müller 1957, Ferrar 1987). Although this species has not been specifically recorded as a pest, its mere abundance at times may be detrimental to the growth of legumes (Ferrar 1987). Eggs are presumably laid beneath the soil surface, and upon hatching, the larvae begin to attack fresh, healthy nodules (never decaying ones). They tunnel into nodules, hollowing them out, until only an empty shell remains. Fully fed third-instar larvae burrow about 30 cm into the soil to overwinter. Pupation occurs in the soil in spring (Müller 1957, Ferrar 1987). A single generation is produced annually.

The egg, larval stages (first, second, and third instars), and puparium are described in detail and illustrated by Müller (1957). Ferrar (1987: 220), however, suggested that Müller's description of the first instar of *M. corrigiolata* does not apply to a micropezid. Steyskal (1964) presented a key to the known third-instar larvae of Micropezidae, including *M. corrigiolata*.

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